1988 ANNUAL REPORT OF FLUORIDATED COMMUNITY WATER SUPPLIES IN MANITOBA

SUMMARY

90-00835/

Minister of Health

Room 302
Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

MINISTERIAL STATEMENT

Last year, three more communities in Manitoba chose to provide their residents with the benefits of fluoridated water. Now, more than 750,000 Manitobans have the protection offered by this safe and simple process.

Adjusting the level of fluoride in drinking water has been shown to reduce dental decay by up to sixty percent, and I encourage all Manitoba communities to take advantage of this method of reducing dental disease.

Donald W. Orchard

INTRODUCTION

In 1988, 67 Manitoba Communities, representing 756,000 people were receiving artificially fluoridated drinking water from 50 water treatment plants.

In addition, one Provincial and two Federal waterworks facilities practiced artificial fluoridation.

All of the above 50 water treatment plants participated in Manitoba Health's Fluoridation Monitoring Program.

This report consists of a summary of how the Fluoridation Program performed, a brief description of improvements and problem areas along with an example of the tabulated results from the Sampling Program and covering letters which were sent to the individual water plant owners.

In a few cases, a suggestion was made in the covering letters regarding how the operation of the fluoridation equipment could be improved.

Three water treatment plants serving approximately three thousand residents successfully installed and began operating fluoridation equipment with the assistance of Manitoba Dental Health in 1988.

In addition, one Federally operated plant serving a Reserve, which has been fluoridating for a number of years asked to participate in the Fluoride Monitoring Program.

Thirty-seven of the 50 treatment plants were visited/inspected at least once in 1988. All community administrative staff, water plant operators, as well as the Chief Public Health Engineer, Water Services Board staff and W.M. Ward staff were co-operative and helpful.

DISCUSSION

1. Participation In The Program

A total of fifty water treatment plants provided fluoridated water to 67 communities and a total population of over 750,000. Not included in this figure are rural residents who consume water hauled from a community water supply. Approximately 95% of the population of Manitoba on a public water system receive fluoridated water.

Manitoba Dental Health continued to offer financial and technical support to Manitoba communities wishing to install fluoridation systems on a first-time basis. The waterworks operations were evaluated, systems designed and equipment specified. Once the systems were purchased, assistance in installation, start-up and operation was provided by Manitoba Dental Health Technical Staff.

2. New Systems

The communities of Austin, St. Jean and Winnipegosis installed fluoride feed equipment with Manitoba Dental Health assistance and are now successfully participating in the Manitoba Health Fluoride Monitoring Program.

3. Up-dating Of Equipment

The communities of Carman, Boissevain, Minnedosa, and MacGregor replaced their manual, or batch mix fluoride feeders with fluoride saturators. This was done at the suggestion of, and with technical assistance from Manitoba Dental Health Technical Staff. In the cases of Minnedosa and Boissevain, the equipment was supplied as well.

4. Monitoring/Surveillance Program

The operation of all artificially fluoridated water supplies was monitored by Manitoba Dental Health in 1988. The Monitoring Program Program consists of the submission of a bi-weekly composite sample along with a record of feed data and daily recordings by the water plant operator.

Samples were analyzed by the W.M. Ward Technical Services Laboratory tory. All data was examined and tabulated by Dental Health Technical Staff who then provided assistance in resolving any problems in maintaining proper fluoride levels.

Water plants were also visited on a routine basis for the purpose of encouraging preventive maintenance, careful operation and perpetrating communication in general. Evidence of appreciation for this assistance is apparent in part from the number of telephone calls from the field.

A total of 1150 fourteen-day composite samples and accompanying report sheets were submitted by the water treatment plant operators.

5. Performance Of The Monitoring/Surveillance Program

Of the 1150 bi-weekly composite samples submitted by water treatment plant operators, 998 or 86 % contained fluoride levels within the correct operating range. The samples which were outside the correct operation range, 52 were either slightly high or non-representative, while 111 were below the correct operating range.

6. Areas Of Improved Operation

Twenty eight water treatment plants showed operational improvements to varying degrees or maintained a high standard of performance. This was reflected by the number of bi-weekly composite samples which contained fluoride within the recommended operating range of 1.0 - 1.4 mg/L. This improvement can be attributed to in-plant training, purchase of new equipment as recommended, and a general increase in contact between Dental Health technical staff and the water treatment plant operators.

7. Plants Maintaining An Excellent Performance Record

The water treatment plant operators in thirteen communities continued to maintain very good to excellent records of fluoride levels.

8. Water Plants With Reduced Efficiency

The twelve water treatment plants had fewer bi-weekly composite samples containing the recommended level of fluoride over the previous year. Of these, problems in 7 towns were corrected during the 1988 operating year and will receive further assistance in 1989. The remaining 5 water treatment plants are targeted for a major review in 1989.

9. Improvement Of Fluoridation Equipment/Operating Procedure

It should be noted that in-plant training and on-going technical assistance is considered to be a continuing process due to new water treatment plant personnel, development of new equipment and safety procedures, alteration of water treatment plants and installation of new systems.

New fluoride feed equipment was purchased and installed at the recommendation of Dental Health technical staff in four communities in 1988.

New fluoride test kits were purchased in five communities in 1988.

Major reviews of operating procedure and equipment were conducted in seventeen water plants.

3 fluoride test kits were loaned to ten communities who were experiencing analytical problems.

10. New Communities On The Water Fluoridation Program

New fluoridation systems were installed and started up with the assistance of Manitoba Health technical staff in the communities of Winnipegosis, St. Jean Baptiste and Austin. All 3 systems are being operated satisfactorily.

In addition, the Sandy Bay Reserve, which is under Federal jurisdiction, opted to participate in the Manitoba Health Fluoride Monitoring Program.

11. Promotion

Increased promotion of water fluoridation by Dental Health staff at the community level resulted in the installation of fluoridation systems in the above three communities on a first-time basis.

Promotion included initial contacts in non-fluoridating communities, presentations to Community Councils (both public and in-camera), and and interest groups. Newspaper article promoting fluoridation and announcing systems' start-up, along with congratulatory letters and letters of notification to the proper authorities originated from this department.

Letters and data sheets were sent to owners of fluoridating water plants for the purpose of keeping water plant owners informed of the fluoride monitoring program results and to positively reinforce good performance.

Certificates of Commendation signed by the Minister of Health and Executive Director of Dental Health were issued to the following water treatment plant operators for achieving excellent performance records in 1988:

OPERATOR	COMMUNITY
Mr. Dave Walker & Mr. Rudy Tomchuk	Gimli Industrial Park
Mr. Bill Mychasiw	Hartney
Mr. Jack Cronk & Mr. Claude Collette	Letellier
Mr. Ivan Harper	McCreary
Mr. Elmer Pederson & Staff	Melita
Mr. Gary Odlum	Pilot Mound
Mr. Harold Schrader	Russell
Mr. Cliff Anderson & Staff	Shilo
Mr. Ross Klassen & Staff	Steinbach
Mr. Russ Yachiw & Staff	The Pas
Mr. Ron Pascal*	Winnipegosis
Mr. Lou Loewen & Mr. Abe Dick	Winkler
Mr. Bill Zander	Souris

* First year of operation.

12. Support Services

Manitoba Health/Dental Health wishes to acknowledge the support received from other groups and governmental departments which provided assistance with the performance of the Fluoridation Program:

i. The Technical Services Laboratory for conducting the regular fluoride analyses and shipping reagents, sample bottles and fluoride results to participating communities in addition to compiling data for a fluoride level survey.

ii. The Manitoba Water Services Board for the promotion of fluoridation in new water treatment plants.

iii. Environmental Health Services, Manitoba Health for engineering consultation and advice with administration, design, installation and troubleshooting in-plant operational malfunctions.

iv. Department of Environment for assistance with data on the past performance of the program.

v. Administrative staff, water councillors and especially water treatment plant operators in all communities with water fluoridation equipment. Their friendly cooperation and receptiveness to assistance proffered by Dental Health technical staff has resulted in a better service to residents of the communities participating in the program.

ANNUAL OPERATING REPORT

The following 2 pages are examples of the summary of the Monitoring Program which was sent to the owner of each water treatment plant on the Program. (Mostly the Mayor & Council, but in some cases the Manitoba Water Services Board).

The accompanying letter is intended to serve as either a positive reinforcement for good performance or in a few cases to formalize a suggestion to improve an operation.

The summary of the years' performance is at the bottom of the data sheet, and an explanation of the data is on the following page.

Manitoba

Health Dental Health

3rd Floor
800 Portage Avenue
Winnipeg, Manitoba, CANADA
R3G 0N4

(204) 945-6685

Sample

File 7.2b

March 20, 1989

RE: 1988 FLUORIDATION CONTROL DATA FOR THE TOWN OF -

Attached, for review by your Mayor and Council is a data table summarizing the operation of the - water fluoridation system for 1988.

Twenty five of the required twenty six bi-weekly composite samples were submitted. All contained fluoride in concentrations within the recommended range of 1.0 - 1.4 mg/L.

Your Waterworks Operators have once again done an excellent job of maintaining the proper fluoride levels in the - water supply.

Yours truly,

Jim Senka
Fluoridation Officer

JS/sw

Attach.

c.c. Water Plant Operators

sample

FLUORIDE CONTROL DATA - 1988

LOCATION - -

FLUORIDATOR -W&T A-747 Ser

CHEMICAL - Naf 3%

OPERATOR - -

TEST KIT - Hach Spectrophotometer

TELEPHONE - -

RAW FLUORIDE - 0.26

CALCULATION - 13200

SAMPLING PERIOD	COMPOSITE (LAB)	COMPOSITE (OPERATOR)	AVERAGE DAILY	CALCULATED FEED	THEORETICAL DOSAGE
1.JAN 2-JAN 15	1.14	1.22	1.20	0.73	0.99
2.JAN 16-JAN 29	1.05	1.17	1.13	0.64	0.90
3.JAN 30-FEB 12	1.05	1.20	1.12	0.76	1.02
4.FEB 13-FEB 26	NOT AVAIL	0.98	0.98	0.57	0.83
5.FEB 27-MAR 11	1.12	1.20	1.15	0.76	1.02
6.MAR 12-MAR 25	1.15	1.22	1.21	0.84	1.10
7.MAR 26-APR 08	1.10	1.18	1.17	0.86	1.12
8.APR 09-APR 22	1.20	1.28	1.26	0.87	1.13
9.APR 23-MAY 06	1.23	1.30	1.23	0.86	1.12
10.MAY 07-MAY 20	1.15	1.20	1.18	0.87	1.13
11.MAY 21-JUN 03	1.15	1.20	1.20	0.86	1.12
12.JUN 04-JUN 17	1.15	1.21	1.21	0.87	1.13
13.JUN 18-JUL 01	1.20	1.17	1.17	0.86	1.12
14.JUL 02-JUL 15	1.27	1.22	1.17	0.87	1.13
15.JUL 16-JUL 29	1.10	1.23	1.21	0.86	1.12
16.JUL 30-AUG 12	1.10	1.00	1.12	0.77	1.03
17.AUG 13-AUG 26	1.18	1.10	1.14	0.87	1.13
18.AUG 27-SEP 09	1.18	1.19	1.20	0.83	1.09
19.SEP 10-SEP 23	1.15	1.21	1.22	0.9	1.16
20.SEP 24-OCT 07	1.15	1.20	1.22	0.83	1.09
21.OCT 08-OCT 21	1.13	1.23	1.23	0.75	1.01
22.OCT 22-NOV 04	1.05	1.22	1.19	0.77	1.03
23.NOV 05-NOV 18	1.00	1.07	1.09	0.58	0.84
24.NOV 19-DEC 02	1.20	1.22	1.23	0.92	1.18
25.DEC 03-DEC 16	1.30	1.37	1.32	1.01	1.27
26.DEC 17-DEC 30	1.15	1.30	1.24	0.92	1.18
AVERAGE TO DATE	1.15	1.20	1.18	0.82	1.08
RANGE - LOW	1.00	0.98	0.98	0.57	0.83
TO DATE - HIGH	1.30	1.37	1.32	1.01	1.27

SAMPLES ABOVE LIMIT	0
SAMPLES BELOW LIMIT	0

EXPLANATION OF FLUORIDATION CONTROL DATA

"Tech. Ser. Composite" - Fluoride analysis conducted by the Manitoba Government Technical Services Laboratory on the bi-weekly composite sample submitted by the water plant operator. This composite sample represents a 2-week sampling period, comprised of 14 samples of approximately 65 ml each collected by the water treatment plant operator. (14 day composite is about one litre of treated water)

"Operator Composite" - Fluoride reading conducted and reported by the water treatment plant operator on the bi-weekly sample before it is sent to the Technical Services Laboratory.

"Average Daily" - Mathematical average of the 14 daily fluoride tests conducted and reported by the water treatment plant operator.

"Calculated Dosage" - The fluoride dosage added to the water supply, calculated from the amount of fluoride chemical added and the amount of water treated.

"Natural Content" - The amount of fluoride in the water before treatment.

"Theoretical Content" - Calculated Dosage plus Natural Content.

"N.R." - Not Recorded.

"B.I.T." -Broken In Transit.

"N.A." - Not Available.